MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2016/2017

DPA5018 – PROGRAMMING FOR BUSINESS APPLICATIONS

(DIT and DBIS Students)

15 OCTOBER 2016
9:00 a.m – 11:00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This question paper consists of **10** pages.
2. There are **4** sections, attempt **ALL** questions.
3. Write your answers in the Answer Booklet provided.

Section A: Multiple Choice Questions (Total: 10 Marks)

Instruction: Choose the best answer. Write your answers in the Answer Booklet provided.

1. _____ is a low-level programming language which is only understood by computers.

   A. Visual Basic
   B. Machine language
   C. Pseudocode
   D. Algorithm

2. Testing an algorithm at the flowchart stage is known as _____.

   A. sequence
   B. skipped
   C. desk checking
   D. repetition

3. Hierarchy charts are also called _____.

   I. Structure charts
   II. HIPO (Hierarchy plus Input-Process-Output) charts
   III. Top-down charts
   IV. VTOC (Visual Table of Contents) charts

   A. I and II
   B. II, III and IV
   C. I, II and IV
   D. All of the above

4. Which of the following is **TRUE** about type of errors for the code below?

```
Dim value As Integer = 1234567
value = value * value
txtBox.text = CStr(value)
```

   A. Mispelling
   B. Overflow
   C. Omissions
   D. Logical error

5. A _____ control displays a list of items from which the user can select one or more. If the number of items exceeds the number that can be displayed, a scroll bar is automatically added to the _____ control.

   A. List box, list box
   B. Check box, list box
   C. Radio button, check box
   D. Radio button, radio button

Continued...

6. Variables declared inside an event procedure are said to have _____scope and are only available to the event procedure in which they are declared.

   A. Class-level
   B. Local
   C. Event-level
   D. Variable

7. Which of the following are **TRUE** about creating the outline for an event procedure?

   I. Double-click on a control
   II. Select a control, click on the Events button in the Properties window, and double-click on an event.
   III. Double-click on a code editor
   IV. Select an event, click on the Events button in the Toolbox window, and double-click on an event.

   A. I and IV
   B. I and II
   C. III and IV
   D. II and III

8. What will be the output of `txtEarnings` after the execution of these statements?

```
Dim hourlyWage As Double = 30.55
Dim hoursWorkded As Double = 5.5
txtEarnings.Text =
      (hourlyWage*hoursWorked).ToString("C2")
```

   A. $168.025
   B. $168.02
   C. $168.03
   D. $168

9. _____ control is used to identify the contents of a text box. By default, it will automatically resizes to accommodate caption on one line.

   A. Text box
   B. List box
   C. Label
   D. Check box

Continued...

10. Which of the following is the correct sequence of developing a Visual Basic application?

    I. Design the Interface for the user.
    II. Determine which events the controls on the window should recognize.
    III. Write the event procedures for those events.

    A. I, III, II
    B. II, I, III
    C. I, II, III
    D. III, II, I

Section B: True/False Questions (Total: 10 Marks)

Instruction: Answer T for TRUE and F for FALSE statements. Write your answers in the Answer Booklet provided.

1. A `BackColor` property is used to change the background color of a control.

2. Variables of type `Integer` can be assigned both whole numbers and decimal numbers.

3. Flowchart, pseudocode and hierarchy chart are tools that can be used to convert algorithms into computer programs.

4. The statement `lstBox.Items.Add(5)` displays the value of 5 in the list box.

5. Initialization of a numeric variable is required to specify a nonzero initial value.

6. Variables of type Double can be assigned both whole numbers and numbers with decimals.

7. `lstBox.Itms.Add(23)` is one type of syntax errors which is omission.

8. Assigning a Double value to an Integer variable is called widening.

9. The statement that invokes a Sub procedure is referred to as a calling statement.

10. Passing by reference occurs when a variable argument is passed to a parameter not preceded with ByRef, just the value of the argument is passed.

Continued...

Section C: Structured Questions (Total: 45 Marks)

Instruction: Answer ALL questions in the Answer Booklet provided.

QUESTION 1

[15 Marks]

a. Referring to Figure 1, write a button click event procedure to calculate the total price and price after discount. Price per item and quantity will be inserted by the user. (10 Marks)

(Hint: Data type conversion from "text" to "double" is necessary.)

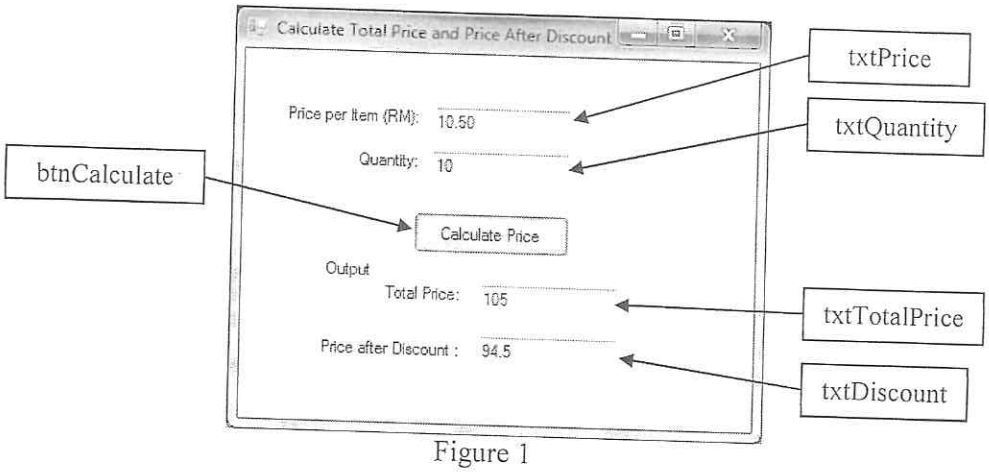

Figure 1

```
Private Sub btnCalculate_Click() Handles btnCalculate.Click
    ... ...
    ... ...
    ... ...

End Sub
```

b. Complete the code below to select a text file and display its content in `lstOutput`. (2 Marks)

```
Private Sub btnSelect_Click(...) Handles btnSelect.Click
 Dim txtFile As String
 OpenFileDialog1._____(i)_____
 txtFile = OpenFileDialog1.RawFile
 lstDisplay.DataSource =
              IO.File._____(ii)_____ (txtFile)
 lstDisplay.SelectedItem = Nothing
End Sub
```

c. Identify **THREE (3)** syntax errors in the code given below. Write the number of line of errors found and correct the statements. (3 Marks)

```
Line
1.        Dim Grade As Integer, str As String
2.        Grade = D
3.        Select Case Is Grade
4.           Case "A"
5.              MsgBox("Best")
6.           Case "B"
7.              MsgBox("Better")
8.           Case "C"
9.              MsgBox("Good")
10.          Case Else
11.             MsgBox("Invalid Grade")
12.       End Case
```

Example:
Line 1: *Dim str As String*

QUESTION 2 [15 Marks]

a. Given that the equation of cylinder is $V = \pi r^2 h$, write a function `cylinder_Volume(...)` which calculates the volume of a cylinder (Figure 2) when the `btnCalculate` button is clicked. The function carries two parameters which are the length of two sides (radius and height).Complete the following code and round the volume to 2 decimal places. (8 Marks)

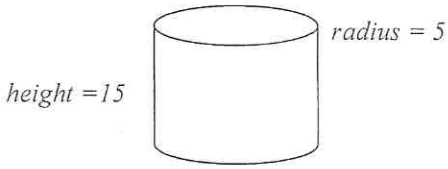

Figure 2

```
Private Sub btnCalculate_Click(...) Handles btnCalculate.Click

    Dim radius, height As Double
    radius=5
    height=15
    txtVolume.text = cylinder_Volume(radius,
height).ToString

End Sub
```

Continued...

b. By using the *for* loop control structures, write a Visual Basic program that reads all the values in the list box, `lstAge` (refers to Figure 3). When the button 'Calculate Average Age' is clicked, the average age of students is shown using a message box (Figure 4).
(7 Marks)

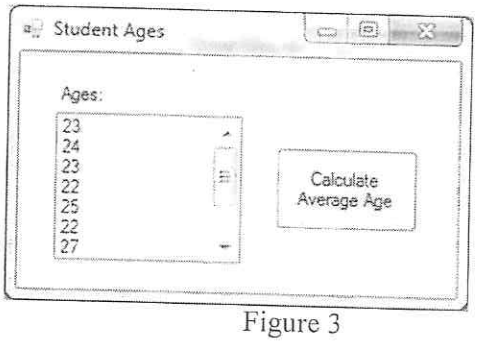

Figure 3

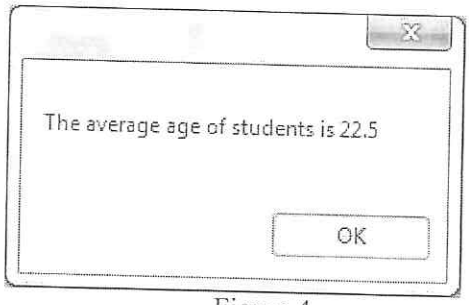

Figure 4

```
Private Sub btnAverage_Click(sender As Object, e As
EventArgs) Handles btnAverage.Click
    ...
    ...
    ...
End Sub
```

QUESTION 3

[15 Marks]

a. Given the sample code as below, determine the output displayed in the list box named `lstOutput`.
(6 Marks)

```
Private Sub btnDisplay_Click(…) Handles btnDisplay.Click
    Dim price1 As Double = 2.5, price2 As Integer = 4.2
    lstOutput.Items.Add("RM" & Math.Round(price2,2) & " , "
& "RM" & Math.Round(price1,2))
    lstOutput.Items.Add("RM" & (price2*price1) & " , " &
"RM" & price1)
    Total(price1, price2)
    Total(price2, price1)
End Sub

Sub Total(ByRef m As Integer, ByVal n As Integer)
    m += n
    lstOutput.Items.Add(m & " , " & n)
    n = m    End Sub
```

b. The program below sends an array to a function procedure `findMax()` to find the minimum value from the array. Write code for the function `findMax()`.

(9 Marks)

```
Private Sub btnCount_Click(…) Handles btnCount.Click
    Dim mark() As Double = {59, 63.5, 77, 85.6, 49.2, 66.5,
92, 83}
    txtResult.Text = "The maximum value is " & findMax(mark)
End Sub
```

Section D: Application Question (Total: 35 marks)

Instruction: Answer the question in the Answer Booklet provided.

The following is a student registration system for Little Caliph Ceria kindergarten. The system will display the details of the students as shown in Figure 6. Basically, the kindergarten accepts students ranging in age from 4 to 6 years and the fees will be charged based on the age as shown in Table 1.

Table 1

Age (years)	Fee (RM)
4	800
5	750
6	650

Besides, the parents also can buy the school items for their children and able to select more than one item. If the total price of item purchases is more than or equal to RM 250.00, they will get a 10% discount. The price for each item is shown in Table 2 below.

Table 2

Item	Price (RM)
School Uniform	300
Shoes	30.50
Books	150.60
Stationery	65.45

Other than that, the kindergarten also provides an extra co-curriculum class for the students. The students able to enroll in more than one class and if the total fee of extra classes enrolled is more than or equal to RM200.00, they will get a 5% discount. The fee for each class is shown in Table 3 below.

Table 3

Extra Class	Fee (RM)
Taekwondo	150
Silat	80
Swimming	350
Iqra' and Al-Quran	100

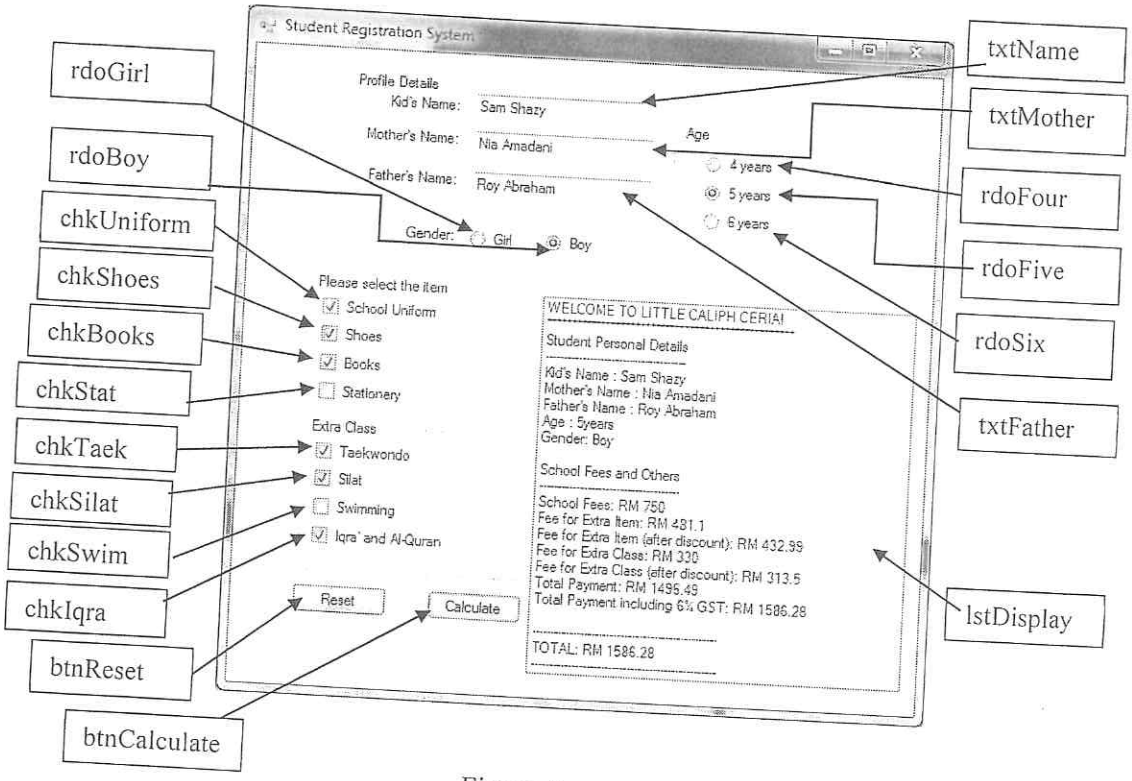

Figure 5

Perform the following tasks by referring to the sample output in Figure 5, with each name of the controls labelled accordingly.

a. Write the following functions as shown in Table 4 below. (21 Marks)

Table 4

	Function Name	Description
i.	`getAge`	• Gets the number of age based on selection of age (rdoFour, rdoFive, rdoSix)) • **Return**: integer number of age
ii.	`getGender`	• Gets the gender based on selection of gender (rdoGirl, rdoBoy) • **Return**: string gender *("Girl", "Boy")*
iii.	`getSchoolFees`	• Gets the amount of school fees based on age • **Return**: amount of fees (refer Table 1)
iv.	`getExtraItem`	• Gets the total price of extra item (chkUniform, chkShoes, chkBooks, chkStat) • **Return**: total price of item selected (refer to Table 2)
v.	`getDiscountItem`	• Gets the price after discount for extra item. • **Return**: total price for extra item after discount
vi.	`getExtraClass`	• Gets the total price of extra classes selected (chkTaek, chkSilat, chkSwim, chkIqra) • **Return**: total price of extra class selected (refer Table 3)
vii.	`getDiscountClass`	• Gets the price after discount for extra classes selected • **Return:** total price after discount for extra classes selected
viii.	`getTotal`	• Gets the total price including fees, extra classes and extra items selected • **Return:** total price (round number to two decimal places)
ix.	`getTotalGST`	• Gets the total price including 6% GST. • **Return:** total price with GST

Continued...

b. Write a sub procedure `Display(...)` that display the details of items purchased in the list box `lstDisplay` as shown in Figure 6. (10 Marks)

WELCOME TO LITTLE CALIPH CERIA!
Student Personal Details
Kid's Name : Sam Shazy
Mother's Name : Nia Amadani
Father's Name : Roy Abraham
Age : 5years
Gender: Boy
School Fees and Others
School Fees: RM 750
Fee for Extra Item: RM 481.1
Fee for Extra Item (after discount): RM 432.99
Fee for Extra Class: RM 330
Fee for Extra Class (after discount): RM 313.5
Total Payment: RM 1496.49
Total Payment including 6% GST: RM 1586.28
TOTAL: RM 1586.28

Figure 6

c. Write an event procedure for button `btnReset` when it is clicked to clear all the contents of textboxes, radio buttons, check boxes, and list box. (4 Marks)

End of Page.